



The Most Advanced A/V Receiver on the Planet: Sherwood Newcastle's R-972

We've had a lot of success at **Sherwood** since our company's inception in 1953. We developed the world's first digital-read-out tuner, the first all-silicon solid-state receiver, the world's first computer controlled tuner, the first receiver with DTS and more. Many of our products have been hailed for their performance. When one of our now departed audiophile publications reviewed our Micro CPU digital tuner, they needed to revamp the scale on their charts just to document its performance. Tom Norton and company at *UltimateAVMag.com* named our Newcastle R-965 receiver one of the world's dozen best for the last two years. Even Mr. Analog once called our R-945 receiver the finest he'd ever had in his home. As deserving of superlatives as these components were, with our new R-972 receiver we've erupted onto new ground. Never before has Sherwood, or any other brand, shoehorned a \$13,000 Professional Room Equalization system into an audio/video receiver.

But our inclusion of Trinnov's Optimizer in the Sherwood Newcastle R-972 is only part of the story. The 972 maintains the Newcastle brand's reputation for exceptional audio performance and adds contemporary creature comforts like: full support for HDMI 1.3b; an Advanced Graphical User Interface (GUI) for user setup and control; a multi-brand, preprogrammed and learning remote control that communicates with the 972 via IR or RF and can operate the entire associated system from anywhere in your home; scaling and deinterlacing of all incoming video to any of several High Definition resolutions including 1080p; support for the lossless audio tracks now available on selected BluRay and HD-DVD titles; XM Radio Connectivity; USB capability; RS-232 two-way communications port; advanced multi-zone capability and more. One can even add piano black end caps for a more Uptown appearance or rack adapters to properly fit the receiver to a professional equipment rack.



Trinnov Audio's Optimizer is a professional digital room correction system. Pricing starts at \$13,000.



Get the basics right; Make it easy to use

Our Newcastle engineers have been tasked with simple but exacting goals. Get the basic performance right. Make the receiver easy-to-use. For the audio path, they insisted on the same circuit topology that earned our '65 series audio components rave reviews worldwide. With 100 Watts RMS per channel from 20 Hz to 20kHz with no more than 0.02% THD they succeeded admirably. Noise levels are exceedingly low. S/N is rated at 105 dB.

HDMI's latest 1.3b standard is fully accommodated. Video from the R-972's 11 inputs (4 HDMI, 3 component, 4 composite/S-video) can be scaled by Silicon Optix Reon video processor to user selected standards including 1080p. The R-972's dual 32-Bit TI audio DSP chips

provide complete audio control including native decoding for Dolby and DTS latest lossless formats.

With a 4-gang FM tuner and XM Radio connectivity, over the air broadcasts are fully supported. The R-972 even has a front panel USB input for use with appropriate hand-held devices.

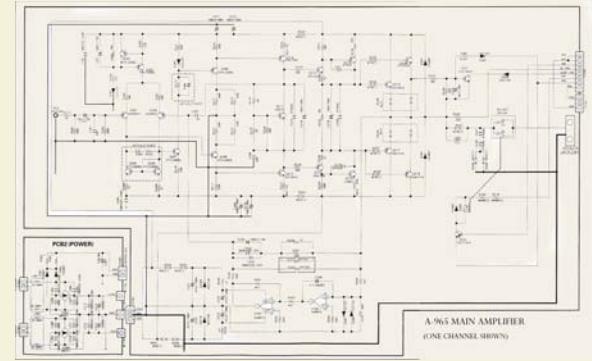
The R-972's ease-of-use fully achieved our engineer's objectives. The receiver's advanced Graphical User Interface makes system setup a breeze. For typical operation, the 972 uses Newcastle's unique Dual-Mode™ preprogrammed and learning remote control.

With the remote in the RF mode, the R-972 can be operated from anywhere within the typical home and translation circuitry built into the receiver outputs IR commands for complete system operation. Control via the R-972's rear-panel RS-232 port is also available.

The R-972 also supports such advanced features as: Input renaming; Adjustable audio/video sync delay by input; automatic digital/analog signal polling; front panel convenience input pack including USB, optical digital plus analog audio and video; automatic set-up; headphone output; Cinema EQ; installer custom memory; and more.



The R-972's advanced GUI is available by HDMI or analog video.



Dr. David Rich, Technical Editor, Sensible Sound, called Newcastle's advanced amplifier circuit topology "unique" and "state of the art."



Dual Mode™
RF+IR remote.



Stellar Video Performance

Silicon Optix Reon processor scales and deinterlaces all incoming video to High Def resolutions and sends it to your display over HDMI.



Matchless Audio

Hear exactly what the artist intended. The R-972 decodes and plays the lossless audio formats found on select BluRay and HD-DVD titles.



Multizone capable

The R-972 can send independent material to each of 3 different zones. It even switches from 7.1 in the main room to 5.1 plus stereo as necessary to power Zone 2.

The R-972 is fully equipped for whole-house audio/video. It supports 3-Zone operation with independent preamp level audio and video available for Zone 2 with audio, only, available in Zone 3. Like many current receivers, the R-972 can use the rear-center surround amplifiers to fully power the speakers for Zone 2 or it can be configured in Room 2 Automatic mode. When in Automatic, the receiver changes from 7.1 operation to 5.1 plus stereo (for Zone 2) when required preserving the complete presentation in the main room.

The R-972 has already received the Innovations 2008 award from the Consumer Electronics Show. One can predict that the Innovations award will be the first of many.



The Trinnov Optimizer: The \$13,000 professional system comes home!

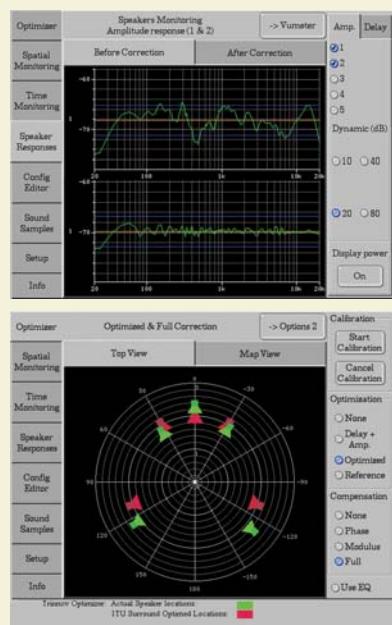
Until now, advanced room correction systems attempted to compensate for deficiencies and errors in loudspeaker frequency response on a speaker-by-speaker basis. While somewhat effective, these methods made no effort to recreate the original performance. Their intent was to smooth in-room speaker response.

The advanced mathematicians and acousticians who developed the Trinnov Optimizer took a larger view. They set out to recreate the 3-dimensional soundfield of the original performance. In this endeavor, accurate channel-by-channel frequency response is only a starting point. Trinnov's task also required the ability to accurately measure and then relocate the apparent sound source until it was identical to the original.

To accurately identify speaker response, placement and room modes, the Optimizer uses a 4-capsule Acoustic Probe to measure the room and speaker system in three dimensions, reports the results, calculates appropriate playback filters and uses the calculated digital IIR and FIR filters to optimize both speaker response and speaker placement. The Optimizer can raise or lower the sonic location of an out of plane speaker or shift the entire sound stage without relocating even a single speaker. With Trinnov and Newcastle you can put the loudspeakers where they fit, use the Optimizer to overcome the shortcomings of speaker placement, speaker response and room interaction and still receive virtually perfect imaging.

Performance graphs: System measurements made by the R-972 can be saved to a USB drive. When that data is uploaded to Trinnov's site, detailed performance graphs can be viewed, evaluated and printed. There is no limit to the number of times an R-972 owner can use this features.

Target Curves: Every room correction system must work to a target. On the R-972, the original performance targets include: *Laboratory flat, Audiophile, Accurate and Front*. When the filters to achieve these targets have been implemented, the user can select to remap his speakers so they conform to either the *ITU Standard for Surround Music* or the *SMPTE Cinema Standard*. These choices can even be stored by input making it easy to assign the *Audiophile* target with ITU remapping for the CD input and to use the *Accurate* target with *SMPTE Cinema* remapping for DVD's.



The R-972's owners can use the receiver's USB capability and the internet to verify the Optimizer's performance in their system.



Sherwood Newcastle R-972

Advanced AVR with RF Control, HDMI 1.3, video scaling to 1080p and the Trinnov Optimizer.

Key Features

- HDMI 1.3 with Deep Color Support
- Lossless Audio: DTS Master Audio HD; Dolby TruHD
- DTS 96/24; Neo 6 Cinema & Music
- Dolby: Dolby Digital +, ProLogic IIx; Virtual Speaker; Headphone
- PCM: 96 kHz Multichannel; 192 kHz Stereo
- Converts analog video to HDMI
- Silicon Optix Reon scales all video to 480p; 576p; 720p; 1080i; 1080p
- Universal Video™ Transcodes Composite & S-Video to component
- XM Radio “Connect and Play” with Neural Surround
- Advanced GUI On Screen Display
- Upgradeable Firmware
- Bi-Directional RS-232 Serial jack/USB Input and output
- Direct Analog input (number of channels)
- 24-bit A to D and D to A converters
- Optical/Coaxial digital inputs
- Optical Digital Output
- Independent Room 2 A/V Output
- Independent Room 3 Audio output
- On-Screen Display from HDMI and analog video outputs
- Dual Mode™ RF + IR Preprogrammed and Learning Remote Control
- A/V Synch Delay by input (0 to 200 mS)

Trinnov Optimizer

- Includes 4 microphone capsule Acoustic Probe
- Measures speaker location & response in 3 dimensions
- Uses FIR and IIR filters to flatten speaker response
- Re-Maps loudspeaker's acoustic position to recreate original soundfield
- Supports ITU Surround Music and SMPTE Cinema Standards
- Writes before/after curves to USB output for Internet analysis
- USB input allows user to upload new target curves

Audio / Video Features

- Dual TI 32-bit DSP processors
- DSP Modes
- Digitally Re-Master PCM to 96 kHz/24-Bit
- 12-Volt Trigger
- Pre-amp Outputs, L,C,R,LS,2 CS,RS, Sub
- Rear Panel A/V Inputs/Outputs
- HDMI Input and Output
- Component Video In/Out
- Audio Inputs/out (including tuner)
- Front Panel A/V Input /with toslink
- Front Panel Audio Input for portable, etc.
- Automatic Room 2™ (7.1 to 5.1 + stereo) operation
- Quadruple Independent Crossovers
- Built-in Biamp Capability
- “Installer Custom Memory”
- Converts Remote RF commands to IR output to operate associated units
- IR in / out
- Programmable Video Input Labeling
- Cinema EQ

Tuner Features

- 4-Gang Quartz PLL Synthesized Tuning
- XM Connect & Play with 30 presets
- 30 Station Presets (Random) with Preset Scan

Specifications

Amplifier/Preamplifier Section

Power Output, Stereo (20 Hz-20 kHz) 8 Ω	100 Watts x 2
THD @ Rated Output	0.02 %
IM Distortion @ Rated Output	0.02 %
Power Output, Srrnd Mode, L/C/R; 1 kHz; 8 Ω	100 Watts x 3
Power Output Rear; 1 kHz, 8 Ω	100 Watts x 4
Input Sensitivity/Impedance	
Line (CD, Tape, Video @ 47 k Ω)	200 mV
Signal-to-Noise Ratio	
Line (CD, Tape, Video)	105 dB
Tone Controls	
Bass Left & Right Front (100 Hz)	L, R ± 10 dB
Treble Left & Right Front (10 kHz)	L, R ± 10 dB
Cinema EQ (-1.8 dB @ 1 kHz, -4.5 dB @ 10 kHz)	Yes
Frequency Response	
Line (CD, Tape, Video) -3 dB	10 Hz-100 kHz
Subwoofer Crossover Frequency, Hz. (selectable)	40,60,80,100,120
Slope (High Pass/Low Pass)	4th order/2nd order
Output Level (Tape Rec) Level/Imp.	180 mV, 2.2k

Video Section

Input Sensitivity/Impedance	1V p-p/ 75 Ω
Output Level/Impedance	1V p-p/ 75 Ω
Frequency Response ±2 dB	
Composite/S-Video	10 Hz-10 MHz
Component Video	DC-100 MHz
Crosstalk @ 1 MHz	50 dB
S/N Ratio	50 dB

FM Tuner Section

DA710/DA708	11.2 dBf
8	14.2 dBf/38 dBf
■	72 dB/68 dB
1	0.1/0.3
■	± 1.0 dB
4/3	45 dB
4 /1	1.0 dB
3/1	60 dB
8/2	65 dB
■/■	80 dB
■	120 dB
■	75 dB

AM Tuner Section

Tuning Range	522-1611 kHz
Usable Sensitivity	500 μV/m
Signal-to-Noise Ratio	40 dB
Total Harmonic Distortion	<1 %
Selectivity/Image Rejection	30dB/33dB
Frequency Response (+0, -6 dB)	80 Hz-2.3 kHz

General Section

Dimensions (H x W x D) (Inches)	7 5/8 x 17 3/8 x 18
Weight	46 lbs.

For purpose of improvement all specifications are subject to change without notice .



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